IN THE CLAIMS:

Listing of the claims:

1. (Currently amended) An imaging spectrometer comprising;

an imager for dividing a received image into ~~two~~ four or more spatially separated spectral images, and

detector apparatus for detecting each spectral image, ~~and~~

~~an input optical retardation element to define the input polarisation state of the image received by the imager wherein the imager comprises at least one polarising beam splitter~~ wherein the imager comprises at least three image replication stages in optical series, each comprising a Wollaston prism, and wherein light forming each spectral image passes through the Wollaston prism of each image replication stage.

2. (Currently amended) A spectrometer according to claim 1 wherein the imager comprises ~~an image replicator to produce two or more spatially separated images, and~~ one or more filter elements which act to alter the spectral characteristics of one or more of the spatially separated images.

3. (Currently amended) A spectrometer according to claim 2 wherein the one or more filter elements are dichroic filter elements.

4. (Currently amended) A spectrometer according to claim 2 wherein the one or more filter elements are located in the vicinity of said detector apparatus or a conjugate plane thereof.

5. (Previously presented) A spectrometer according to claim 2 ~~having an image replicator that comprises two or more polarising beam splitters and~~ additionally comprising optical retardation elements located between Wollaston prisms of adjacent image replication stages ~~the polarising beam splitters~~.

6. (Cancelled)

7. (Currently amended) A spectrometer according to claim [[6]]2 wherein the imager further comprises an input optical retardation element to define ~~imparted by~~ the input polarization state of the image received by a first image replication stage and wherein optical retardation imparted by the input optical retardation element is variable.

8. (Currently amended) A spectrometer according to claim 5 wherein at least one of the optical retardation elements ~~have~~ has substantially wavelength independent retardation properties.

9. (Currently amended) A spectrometer according to claim 1 wherein ~~the imager comprises one or more spectral replicator arranged in optical series,~~ each image replication stage ~~spectral replicator comprising~~ comprises an optical retardation element and a Wollaston prism ~~polarising beam splitter~~.

10. (Original) A spectrometer according to claim 9 wherein one or more of the optical retardation elements provides a wavelength dependent polarisation change.

11. (Previously presented) A spectrometer according to claim 9 wherein the thickness of the one or more optical retardation elements is chosen to define the spectral properties of each spectral image.

12. (Cancelled)

13. (Previously presented) A spectrometer according to claim 1 wherein each spectral image is composed of radiation within a different waveband.

14. (Previously presented) A spectrometer according to claim 1 wherein the detector apparatus comprises a detector array, each replicated image being directed to a separate portion of the detector array.

15. (Previously presented) A spectrometer according to claim 1 wherein the detector apparatus comprises two or more detector arrays.

16. (Original) A spectrometer according to claim 15 wherein a separate detector array is provided to detect each replicated image.

17. (Cancelled)

18. (Previously presented) A spectrometer according to claim 1 wherein the optical components of the imager are formed as a single compound optical element.

19. (Previously presented) A spectrometer according to claim 1 and additionally comprising a field stop, the field stop limiting the field of view of the image received by the imager.

20. (Currently amended) An imaging spectrometer comprising;

imaging means for dividing a received image into ~~two~~four or more spatially separated spectral images, and

means for detecting each spectral image, ~~and~~

wherein the imaging means comprises at least three image replication stages in optical series, each comprising a Wollaston prism, and wherein light forming each spectral image passes through the Wollaston prism of each image replication stage ~~an input optical retardation element to define the input polarisation state of the image received by the imager wherein the imaging means comprises at least one polarising beam splitter~~.